US009100472B2

(12) **United States Patent**
Beattie, Jr. et al.

(10) **Patent No.: US 9,100,472 B2**
(45) **Date of Patent: *Aug. 4, 2015**

(54) **METHODS AND APPARATUS TO PRE-QUALIFY USER COMMUNITIES FOR COMMUNICATION SERVICES**

(71) Applicant: **AT&T Intellectual Property I, LP**, Atlanta, GA (US)

(72) Inventors: **James Gordon Beattie, Jr.**, Bergenfield, NJ (US); **Stephen J. Griesmer**, Westfield, NJ (US); **Stephen F. Triano**, Hillsborough, NJ (US); **Debebe Asefa**, Eatontown, NJ (US)

(73) Assignee: **AT&T Intellectual Property I., L.P.**, Atlanta, GA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 321 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **13/708,033**

(22) Filed: **Dec. 7, 2012**

(65) **Prior Publication Data**

US 2013/0094631 A1 Apr. 18, 2013

Related U.S. Application Data

(63) Continuation of application No. 12/334,169, filed on Dec. 12, 2008, now Pat. No. 8,345,560.

(51) **Int. Cl.**

H04M 1/24	(2006.01)
H04L 12/26	(2006.01)
H04M 1/247	(2006.01)

(52) **U.S. Cl.**

CPC ***H04M 1/24*** (2013.01); ***H04L 12/2602*** (2013.01); ***H04L 12/2697*** (2013.01); ***H04L 43/00*** (2013.01); ***H04L 43/50*** (2013.01); ***H04M 1/247*** (2013.01)

(58) **Field of Classification Search**

CPC . H04L 12/2602; H04L 12/2697; H04L 43/50; H04M 1/24; H04M 1/247

See application file for complete search history.

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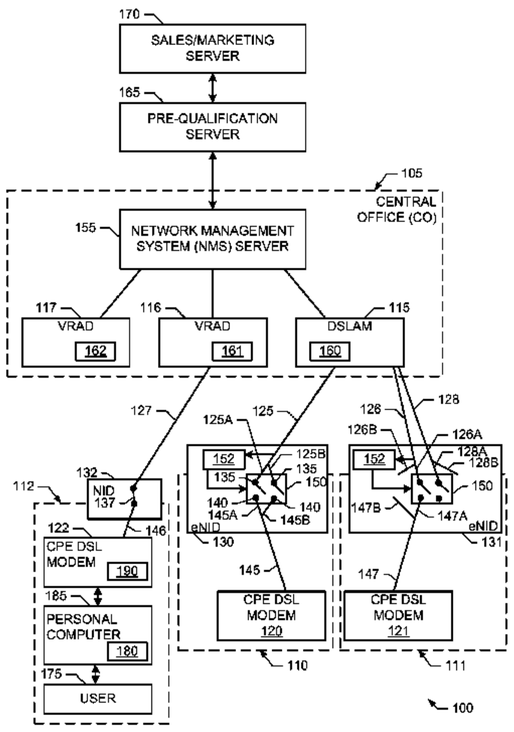
Primary Examiner — Jianye Wu

(74) *Attorney, Agent, or Firm* — Hanley, Flight & Zimmerman, LLC

(57) **ABSTRACT**

Example methods and apparatus to pre-qualify user communities for communication services are disclosed. An example method comprises configuring a first remote network demarcation associated with a first loop to a loop-back state, interrogating the first loop to determine a first parameter representative of the first loop, configuring a second remote network demarcation associated with a second loop to the loop-back state, interrogating the second loop to determine a second parameter representative of the second loop, and compiling a report based on the first and second parameters, the report containing a value that represents a degree to which a communication service can be provided to a user community associated with the first and second loops.

20 Claims, 7 Drawing Sheets



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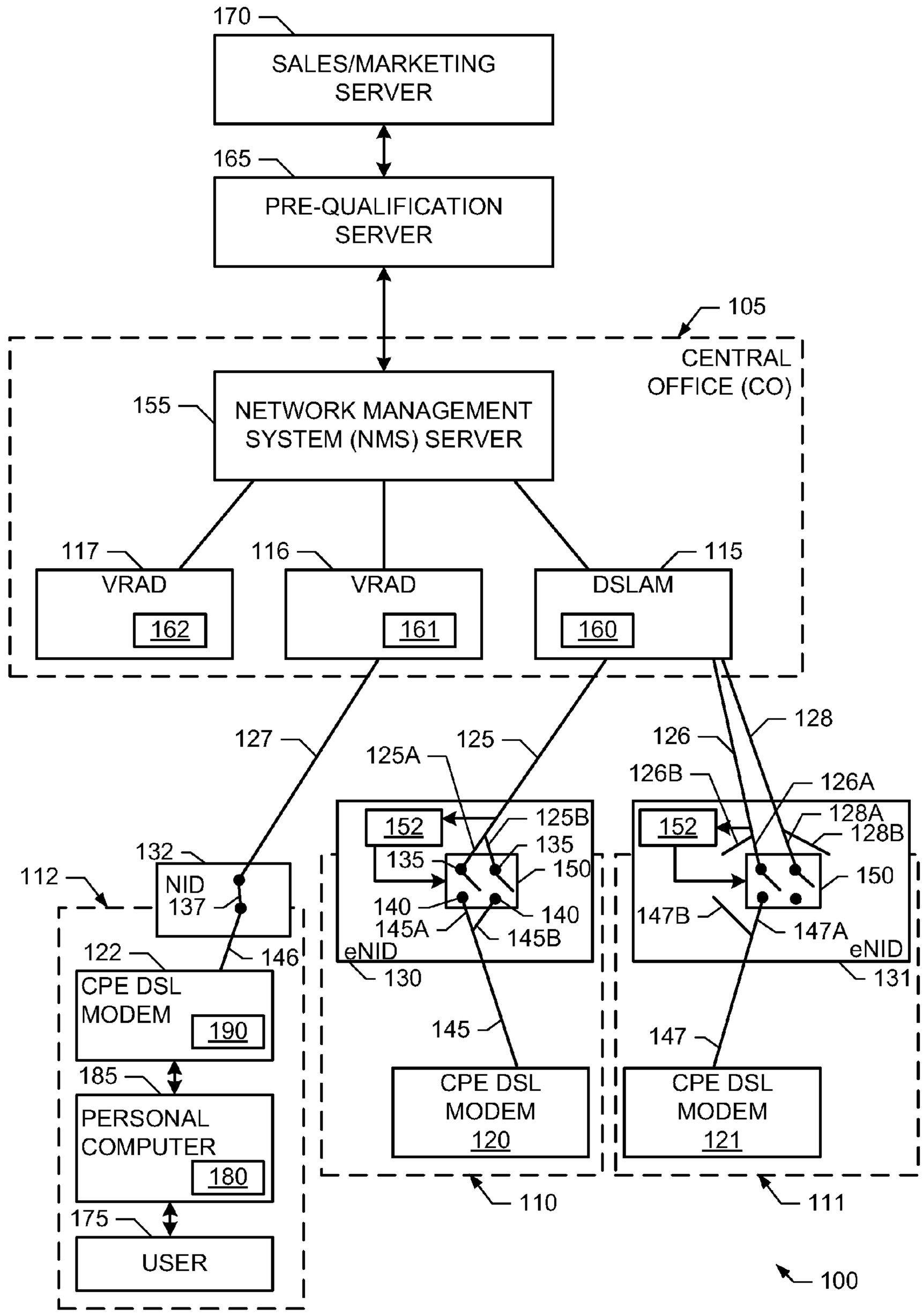
170
SALES/MARKETING SERVER
165
PRE-QUALIFICATION SERVER
105
CENTRAL OFFICE (CO)
155
NETWORK MANAGEMENT SYSTEM (NMS) SERVER
117
VRAD
162
116
VRAD
161
115
DSLAM
160
127
125
125A
126
126B
126A
128
128A
128B
152
152
125B
135
135
150
150
132
112
NID
137
140
145A
140
145B
147B
147A
eNID
eNID
130
131
122
146
CPE DSL MODEM
190
145
147
185
PERSONAL COMPUTER
180
175
USER
CPE DSL MODEM
120
CPE DSL MODEM
121
110
111
100

FIG. 1

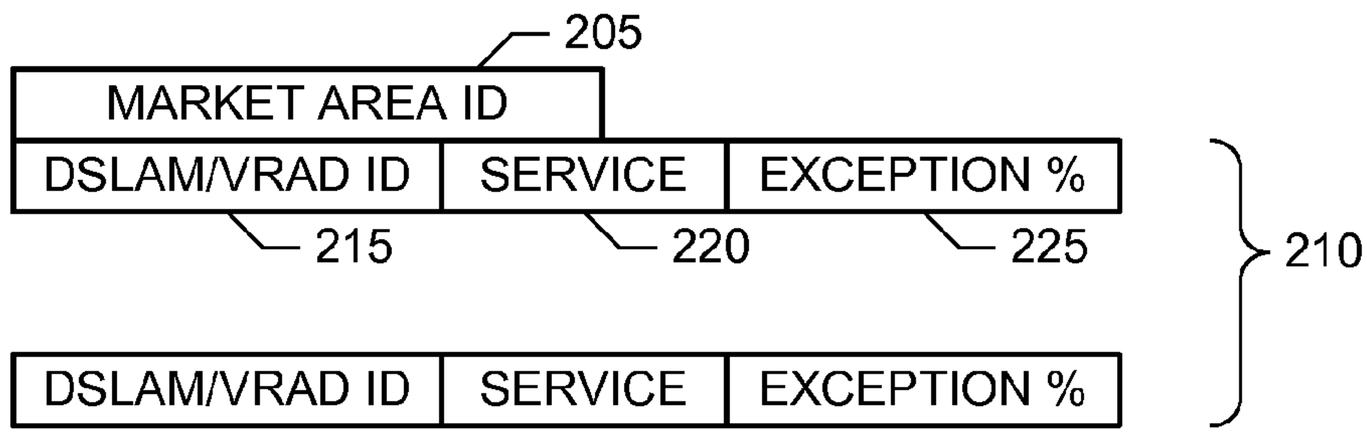

FIG. 2

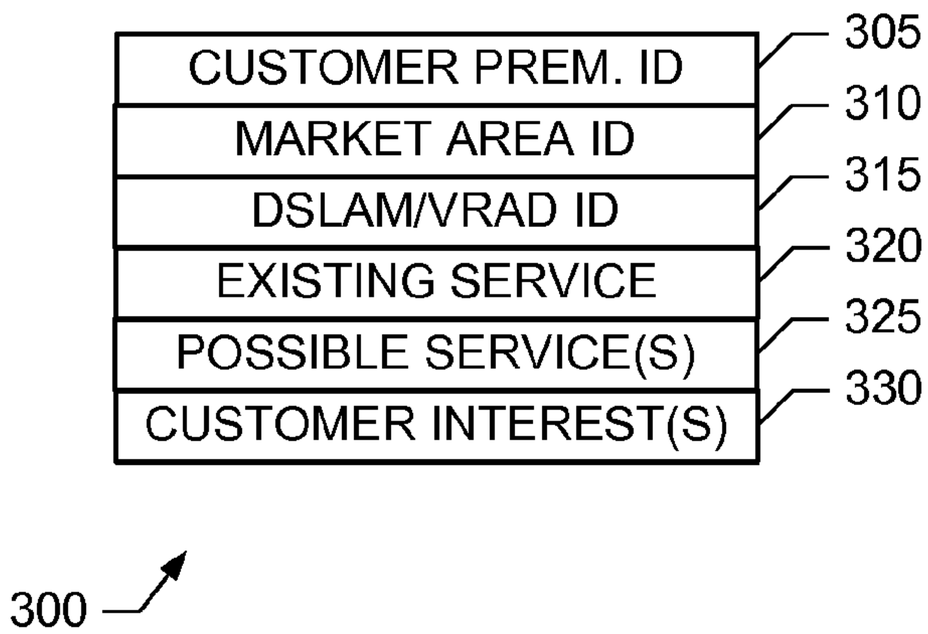

FIG. 3

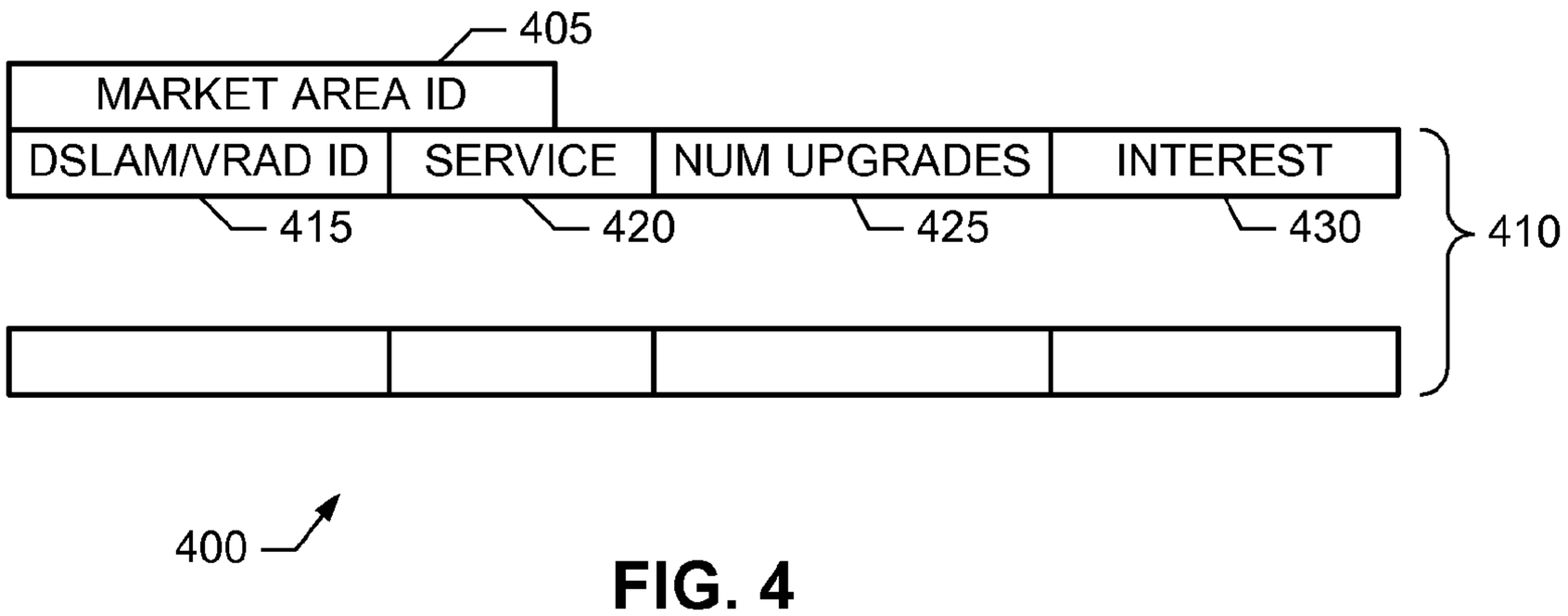

FIG. 4

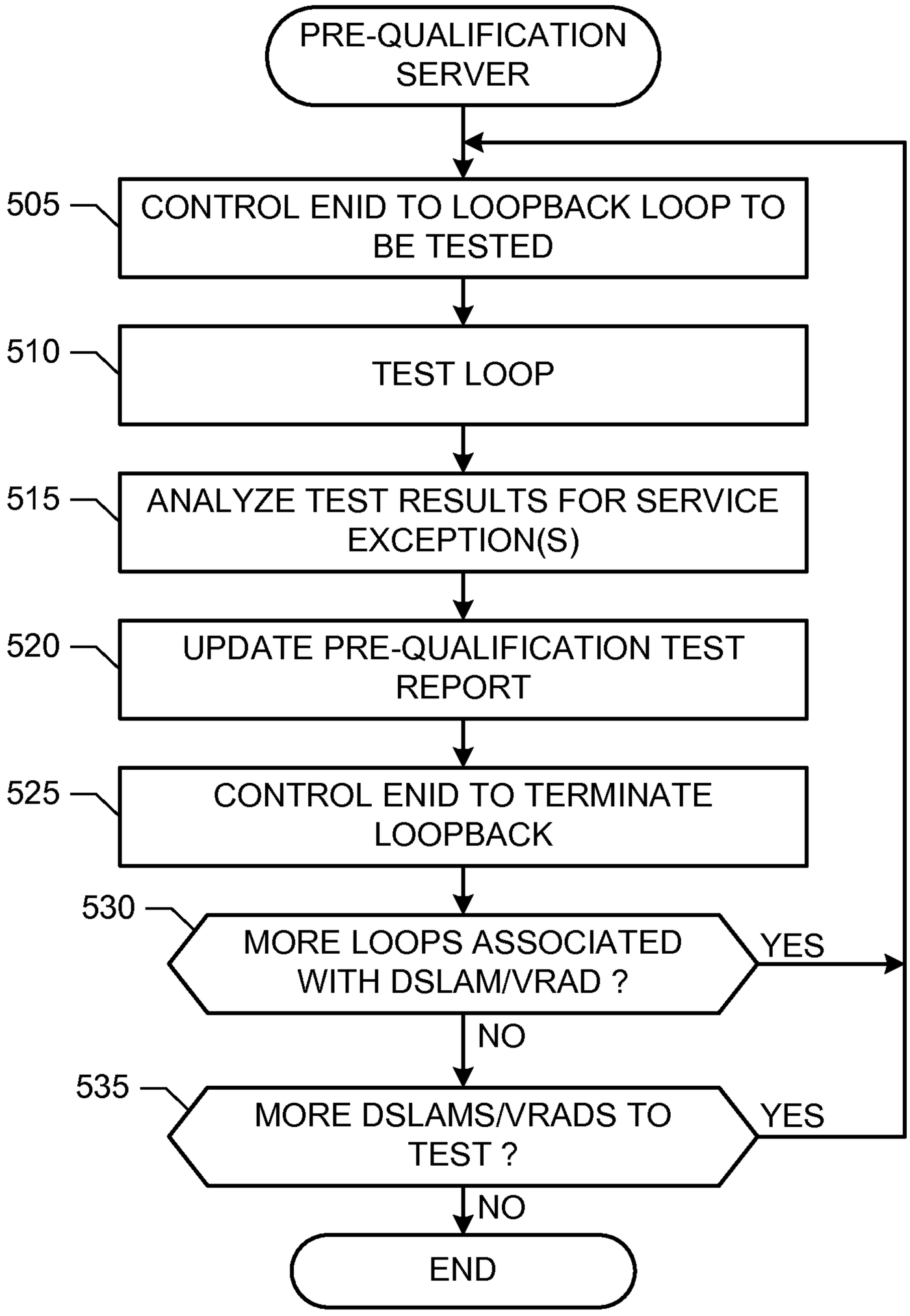
PRE-QUALIFICATION SERVER
505
CONTROL ENID TO LOOPBACK LOOP TO BE TESTED
510
TEST LOOP
515
ANALYZE TEST RESULTS FOR SERVICE EXCEPTION(S)
520
UPDATE PRE-QUALIFICATION TEST REPORT
525
CONTROL ENID TO TERMINATE LOOPBACK
530
MORE LOOPS ASSOCIATED WITH DSLAM/VRAD ?
YES
NO
535
MORE DSLAMS/VRADS TO TEST ?
YES
NO
END

FIG. 5

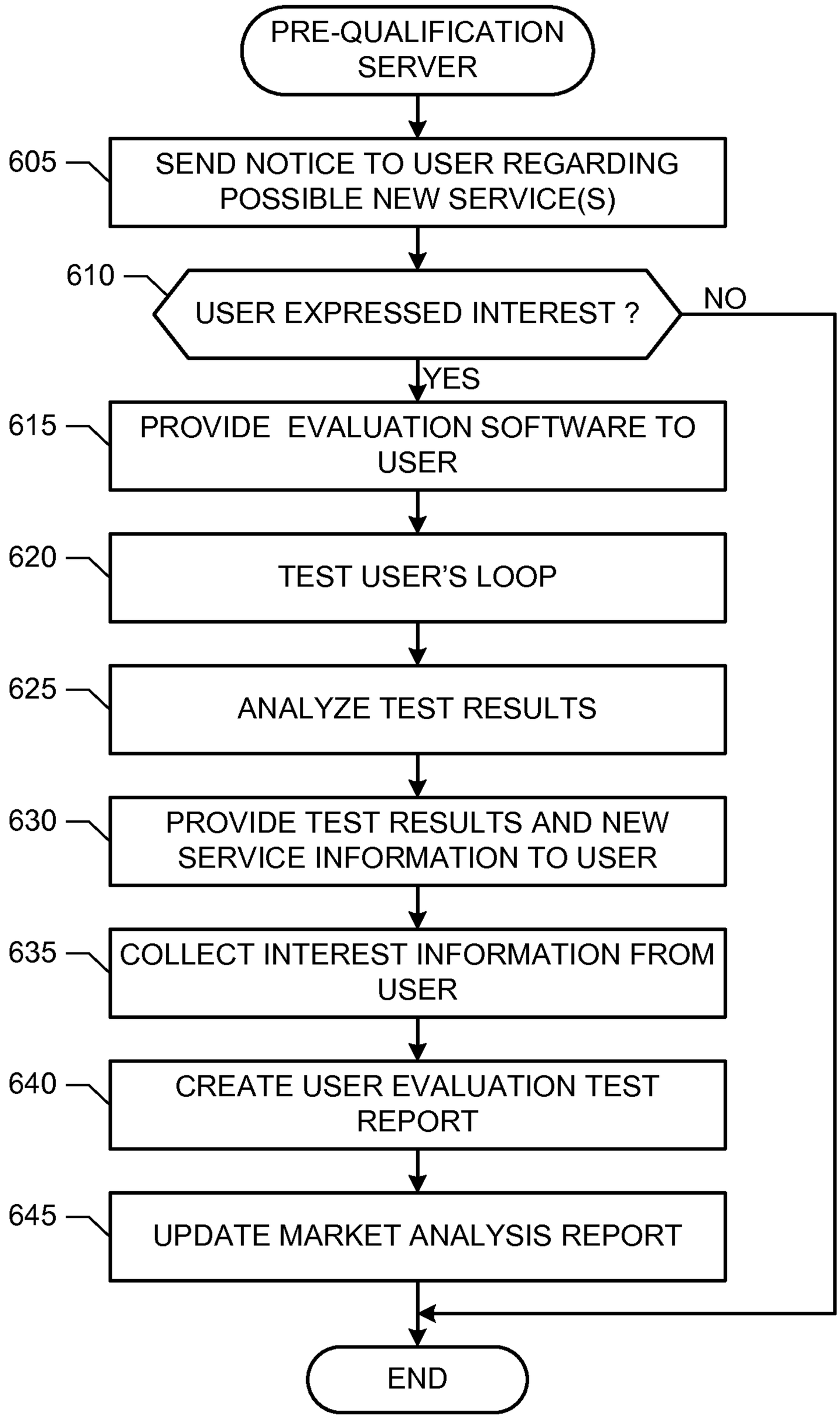
PRE-QUALIFICATION SERVER
605
SEND NOTICE TO USER REGARDING POSSIBLE NEW SERVICE(S)
610
USER EXPRESSED INTEREST ?
NO
YES
615
PROVIDE EVALUATION SOFTWARE TO USER
620
TEST USER'S LOOP
625
ANALYZE TEST RESULTS
630
PROVIDE TEST RESULTS AND NEW SERVICE INFORMATION TO USER
635
COLLECT INTEREST INFORMATION FROM USER
640
CREATE USER EVALUATION TEST REPORT
645
UPDATE MARKET ANALYSIS REPORT
END

FIG. 6

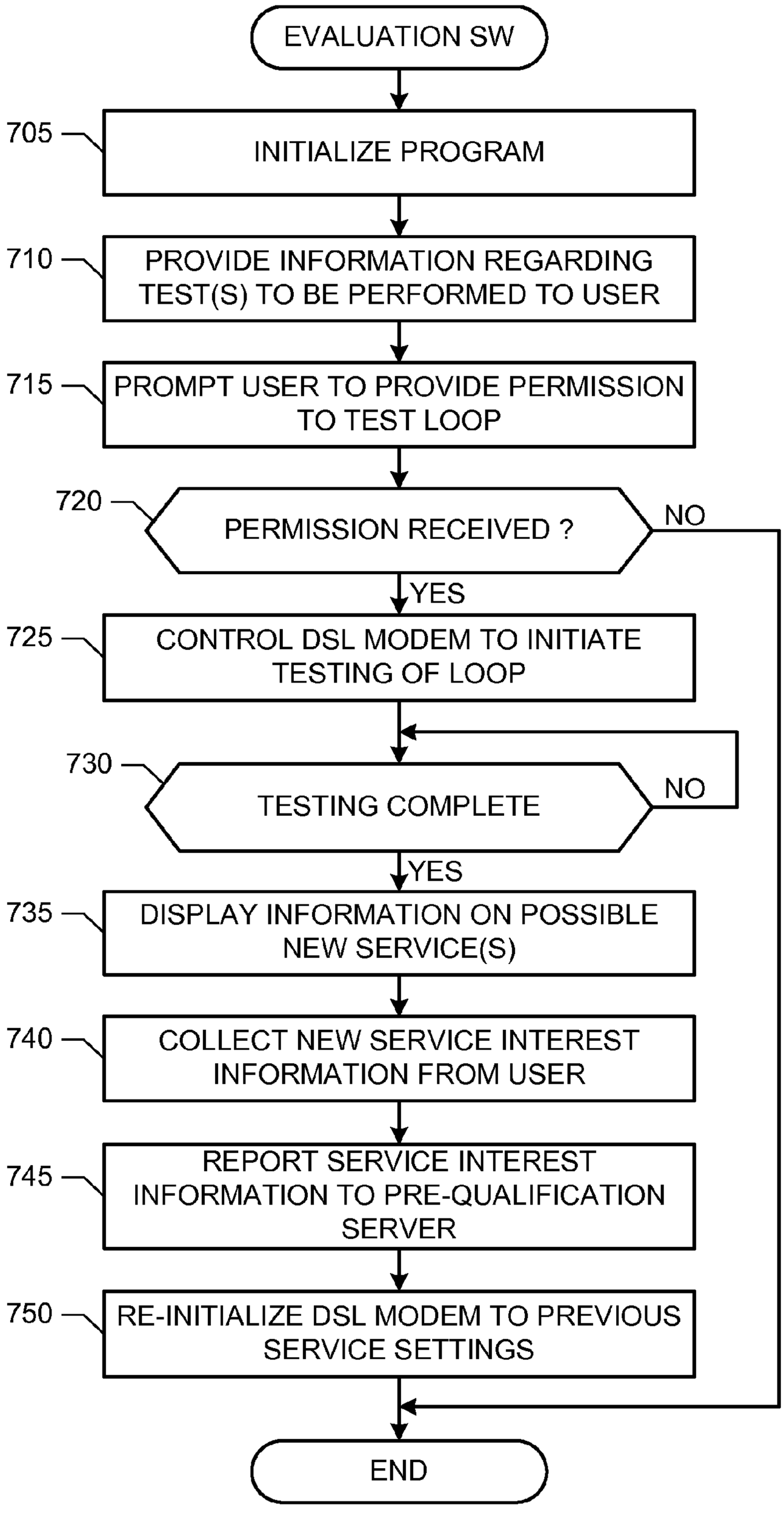
EVALUATION SW
705
INITIALIZE PROGRAM
710
PROVIDE INFORMATION REGARDING TEST(S) TO BE PERFORMED TO USER
715
PROMPT USER TO PROVIDE PERMISSION TO TEST LOOP
720
PERMISSION RECEIVED ?
NO
YES
725
CONTROL DSL MODEM TO INITIATE TESTING OF LOOP
730
TESTING COMPLETE
NO
YES
735
DISPLAY INFORMATION ON POSSIBLE NEW SERVICE(S)
740
COLLECT NEW SERVICE INTEREST INFORMATION FROM USER
745
REPORT SERVICE INTEREST INFORMATION TO PRE-QUALIFICATION SERVER
750
RE-INITIALIZE DSL MODEM TO PREVIOUS SERVICE SETTINGS
END

FIG. 7

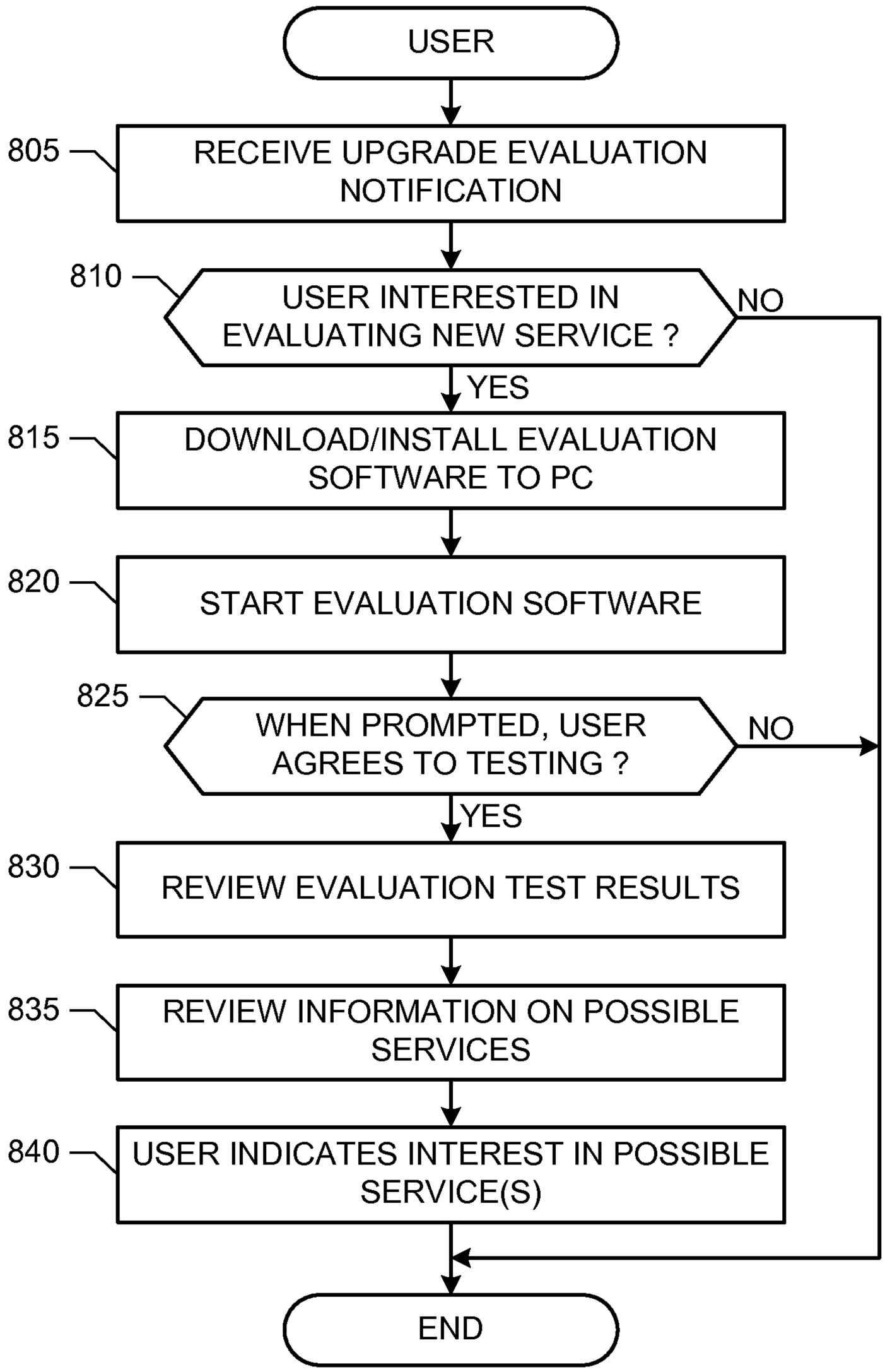
USER
805
RECEIVE UPGRADE EVALUATION NOTIFICATION
810
USER INTERESTED IN EVALUATING NEW SERVICE ?
NO
YES
815
DOWNLOAD/INSTALL EVALUATION SOFTWARE TO PC
820
START EVALUATION SOFTWARE
825
WHEN PROMPTED, USER AGREES TO TESTING ?
NO
YES
830
REVIEW EVALUATION TEST RESULTS
835
REVIEW INFORMATION ON POSSIBLE SERVICES
840
USER INDICATES INTEREST IN POSSIBLE SERVICE(S)
END

FIG. 8

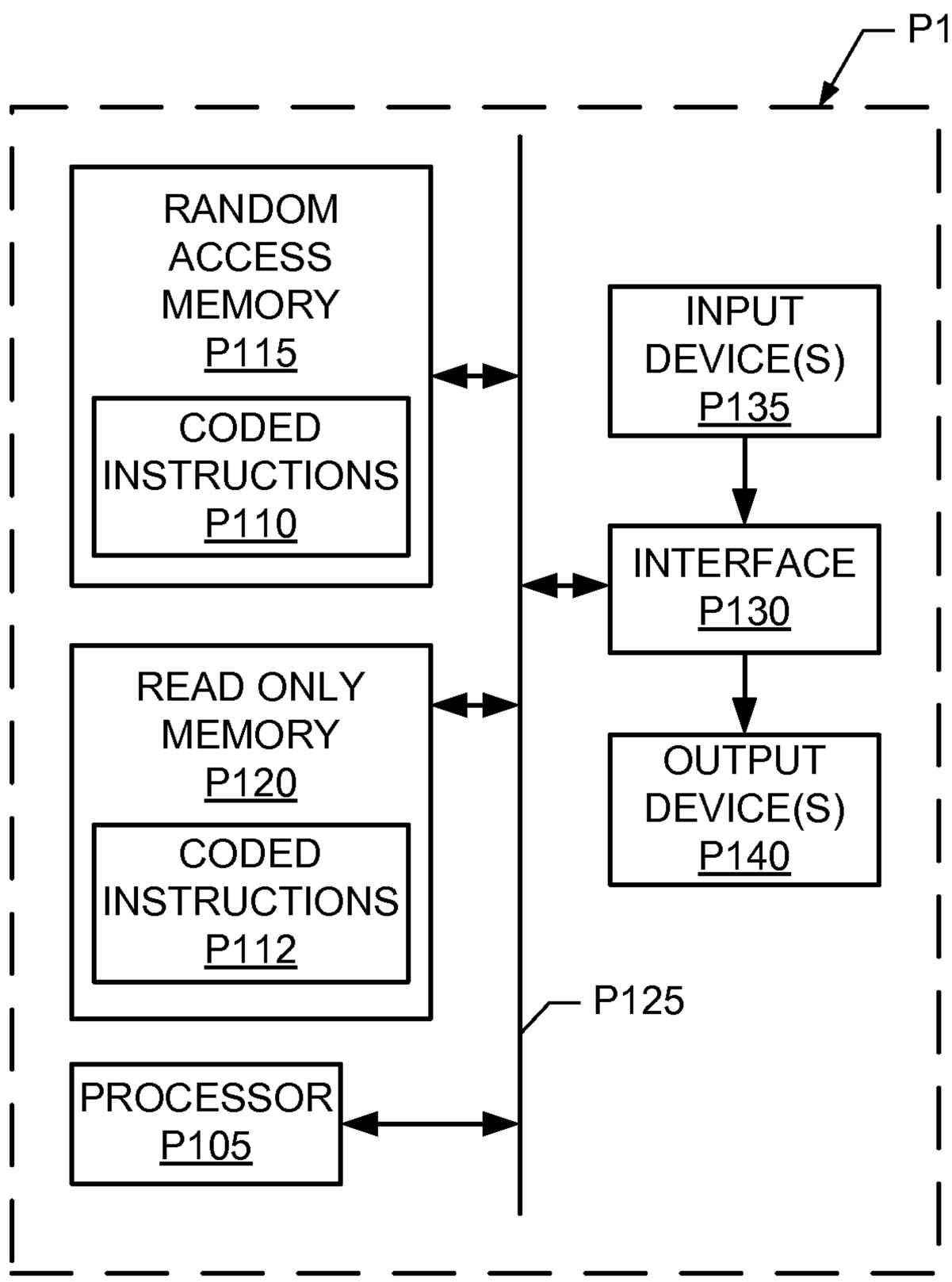
P100
RANDOM ACCESS MEMORY P115
CODED INSTRUCTIONS P110
READ ONLY MEMORY P120
CODED INSTRUCTIONS P112
PROCESSOR P105
INPUT DEVICE(S) P135
INTERFACE P130
OUTPUT DEVICE(S) P140
P125

FIG. 9

METHODS AND APPARATUS TO PRE-QUALIFY USER COMMUNITIES FOR COMMUNICATION SERVICES

CROSS REFERENCE TO RELATED APPLICATION

This patent is a continuation of and claims priority to U.S. application Ser. No. 12/334,169, filed Dec. 12, 2008, entitled "Methods and Apparatus to Pre-Qualify User Communities for Communication Services," which is hereby incorporated herein by reference in its entirety.

FIELD OF DISCLOSURE

This disclosure relates generally to user communities and, more particularly, to methods and apparatus to pre-qualify user communities for communication services.

BACKGROUND

Access networks and/or systems using digital subscriber line (DSL) technologies are commonly utilized to provide communication services to customer premises. DSL technologies enable service providers to utilize telephone lines to connect customers to, for example, a high data-rate broadband Internet network, a broadband service and/or broadband content. An example telephone line uses twisted-pair copper wire to provide Plain Old Telephone System (POTS) services.

A communication company and/or service provider may utilize a plurality of DSL modems implemented by a DSL access multiplexer (DSLAM) and/or a video ready access device (VRAD) at a central office (CO), a remote terminal (RT) or a serving area interface (SAI) to provide DSL communication services to a plurality of customer-premises DSL modems located at respective customer premises. In general, a DSLAM/VRAD receives broadband service content for a subscriber from, for example, a backbone server. A CO DSL modem at the DSLAM/VRAD forms from the content a downstream DSL signal to be transmitted to a customer-premises DSL modem via a telephone line that electrically couples the CO DSL modem at the SAI, RT or CO to the customer-premises DSL modem. Likewise, the CO DSL modem receives an upstream DSL signal from the customer-premises DSL modem via the corresponding subscriber's telephone line, and the DSLAM/VRAD provides the data received via the upstream DSL signal to the backbone server. One or more characteristics of the subscriber's telephone line determine what type(s) and/or speed(s) of DSL services can be supported by the subscriber's telephone line.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a schematic illustration of an example access network constructed in accordance with the teachings of this disclosure.

FIG. **2** illustrates an example pre-qualification test report that may be generated by the example pre-qualification server of the FIG. **1**.

FIG. **3** illustrates an example customer premises evaluation report that may be generated by the example pre-qualification server of FIG. **1**.

FIG. **4** illustrates an example market analysis report that may be generated by the example pre-qualification server of FIG. **1**.

FIGS. **5** and **6** are flowcharts representative of example processes that may be carried out to implement the example pre-qualification server of FIG. **1**.

FIG. **7** is flowchart representative of an example process that may be carried out to implement the example evaluation software of FIG. **1**.

FIG. **8** is flowchart representative of an example process that may be carried out by a user to test their subscriber loop for an emerging service.

FIG. **9** is a schematic illustration of an example processor platform that may be used and/or programmed to carry out the example process of FIGS. **5-7**, and/or to implement any or all of the methods and apparatus disclosed herein.

DETAILED DESCRIPTION

Example methods and apparatus to pre-qualify user communities for communication services are disclosed. A disclosed example method includes configuring a first remote network demarcation associated with a first loop to a loop-back state, interrogating the first loop to determine a first parameter representative of the first loop, configuring a second remote network demarcation associated with a second loop to the loop-back state, interrogating the second loop to determine a second parameter representative of the second loop, and compiling a report based on the first and second parameters, the report containing a value that represents a degree to which a communication service can be provided to a user community associated with the first and second loops.

A disclosed example system includes a first customer premises associated with a first subscriber line and having a first demarcation point, a second customer premises associated with a second subscriber line and having a second demarcation point, a first test module to interrogate the first subscriber line to determine a first parameter representative of the first subscriber line, a second test module to interrogate the second subscriber line to determine a second parameter representative of the second subscriber line, and a pre-qualification server. The pre-qualification server to configure the first network demarcation point associated with the first subscriber line to a loop-back state, configure the second network demarcation point associated with the second subscriber line to the loop-back state, and generate a report based on the first and second parameters, the report containing a value that represents a degree to which a communication service can be provided to a user community associated with the first and second subscriber lines.

Another disclosed example method includes installing evaluation software on a computer communicatively coupled to a customer-premises equipment (CPE) modem, the evaluation software to configure the CPE modem to a test state, interacting with the CPE modem while in the test state to interrogate a wire associated with the first CPE modem to determine a first parameter representative of the wire, and generating a report based on the first parameter, the report containing a value that represents a degree to which a communication service can be provided to a user community associated with the wire.

Yet another disclosed example method includes prompting a user for permission to test whether a wire associated with the user is capable to support a communication service, configuring a CPE modem associated with the user to a test state when the permission is received, wherein the CPE modem while in the test state is to test the wire for the communication service, presenting a first value representative of a result of

the test to the user, and prompting the user to provide a second value representative of an interest in the communication service.

In the interest of brevity and clarity, throughout the following disclosure references will be made to an example access network **100** of FIG. **1**. However, the methods and apparatus described herein to pre-qualify user communities for communication services are applicable to other types of access networks and/or communication systems constructed using other network technologies, topologies and/or protocols. Other example systems include, but are not limited to, those associated with public switched telephone network (PSTN) systems, public land mobile network (PLMN) systems (e.g., cellular), wireless distribution systems, wired or cable distribution systems, coaxial cable distribution systems, Ultra High Frequency (UHF)/Very High Frequency (VHF) radio frequency systems, satellite or other extra-terrestrial systems, cellular distribution systems, power-line broadcast systems, fiber optic networks, passive optical network (PON) systems, and/or any combination and/or hybrid of these devices, systems and/or networks.

FIG. **1** illustrates the example access network **100**. The example access network **100** of FIG. **1** includes any number and/or type(s) of central offices (COs), one of which is designated at reference numeral **105**, remote terminals (RTs) and/or serving area interfaces (SAIs). The example CO **105** of FIG. **1**, and/or other COs, RTs and/or SAIs are used to provide data and/or communication services to one or more customer premises, three of which are designated at reference numerals **110**, **111** and **112**. Example data and/or communication services include, but are not limited to, telephone services, Internet services, data services, messaging services, instant messaging services, electronic mail (email) services, chat services, video services, audio services, gaming services. To provide DSL communication services to the customer premises **110-112**, the example CO **105** of FIG. **1** includes any number and/or type(s) of DSL access multiplexers (DSLAMs) and/or video-ready access devices (VRADs), three of which are designated at reference numerals **115**, **116** and **117**, and the example customer premises **110-112** include any type(s) of CPE DSL modems **120**, **121** and **122**. The example DSLAMs/VRADs **115-117** of FIG. **1** include and/or implement one or more CO DSL modems (not shown) for respective ones of the customer premises **110-112**. The example DSLAMs/VRADs **115-117**, the CO DSL modems within the DSLAMs/VRADs **115-117**, and/or the example CPE DSL modems **120-122** of FIG. **1** may be implemented, for example, in accordance with the International Telecommunications Union-Telecommunications Sector (ITU-T) G.993.x family of standards for very high-speed DSL (VDSL), and/or the ITU-T G.992.x family of standards for asymmetric DSL (ADSL). However, the CO DSL modems and/or the CPE DSL modems **120-122** may be implemented in accordance with any past, present and/or future standard, specification and/or recommendation.

While in the illustrated example of FIG. **1**, the DSLAMs/VRADs **115-117** are implemented at the CO **105**, any of the DSLAMs/VRADs **115-117** may be, additionally or alternatively, implemented at an RT, at an SAI and/or at any other location between the CO **105** and the customer premises **110-112**. In such instances, a fiber-optic cable (not shown) may be used, for example, to communicatively couple the remotely located DSLAM/VRAD **115-117** to the CO **105**.

In the illustrated example of FIG. **1**, the DSLAM **115** provides DSL services to the CPE DSL modems **120-122** via respective subscriber lines **125**, **126**, **127** and **128**. Subscriber lines are sometimes also referred to in the industry as "wires," "wire-pairs," "subscriber loops" and/or "loops." While throughout this disclosure reference is made to the example loops **125-127** of FIG. **1**, a loop (e.g., any of the example loops **125-127**) used to provide a DSL service to a customer-premises location (e.g., any of the locations **110-112**) may include and/or be constructed from one or more segments of twisted-pair telephone wire (e.g., any combination of a feeder one (F1) cable, a feeder two (F2) cable, a feeder three (F3) cable, a feeder four (F4) cable, a distribution cable, a drop cable, and/or customer-premises wiring), terminals, and/or distributions points (e.g., an RT, an SAI, a serving terminal, a vault, a pedestal and/or any other type(s) of wiring distribution points). Such segments of twisted-pair telephone wire may be spliced and/or connected end-to-end, and/or may be connected at only one end thereby creating one or more bridged-taps. Regardless of the number, type(s), gauge(s) and/or topology of twisted-pair telephone wires used to construct the example loops **125-128**, they will be referred to herein in the singular form, but it will be understood that the term "loop" may refer to one or more twisted-pair telephone wire segments and may include one or more bridged taps.

As commonly used in the industry, the term "network demarcation" denotes a location and/or device where cabling and/or equipment associated with a service provider (e.g., associated with the CO **105** and/or the DSLAMs/VRADs **115-117**) is physically, electrically and/or communicatively coupled to cabling and/or equipment associated with a customer premises, a subscriber, a user and/or a customer (e.g., any of the example customer premises **110-112**). Such subscriber cabling and/or equipment are often owned by the customer but may, in some instances, be owned, leased and/or otherwise provided by the service provider. Typically a network demarcation unit (e.g., a network interface device (NID) **130**) is located at the network demarcation (e.g., on the outside of an exterior wall of the customer-premises **110**) to implement the physical, electrical and/or communicative coupling between the subscriber and service provider sides of the network demarcation. For instance, the example NID **130** of FIG. **1** contains a first set of screw terminals and/or jacks **135** to couple the loop **125** to the NID **130**, and contains a second set of screw terminals and/or jacks **140** to couple subscriber cabling **145** to the NID **130**. The example subscriber cabling **145** electrically couples the CPE DSL modem **120** to the NID **130** and, thus, to the loop **125**. Example NIDs **131** and **132** likewise contain screw terminals and/or jacks as described for the NID **130**. In a conventional and/or traditional NID, such as the example NID **132** of FIG. **1**, a jumper and/or wire **137** electrically couples the two sets of cabling **127** and **146** across the NID **132**.

To permit probing, interrogation, sensing and/or any other form(s) of testing of the example loops **125** and **126** from the example CO **105**, the example NIDs **130** and **131** of FIG. **1** are enhanced NIDs (eNIDs). The example eNIDs **130** and **131** of FIG. **1** each include a switch **150** to allow the loops **125** and **126** to be looped back at the eNIDs **130** and **131**, respectively. The example switches **150** of FIG. **1** may be used to configure a loop back for an individual loop **125**, **126** and/or to configure a loop back using an additional loop. In general, the type of loop back realized by the example switches **150** at any particular eNID **130**, **131** depends on how conductors of the loops **125**, **126** and **128** and conductors of the subscriber wiring **145** and **147** are connected to respective terminals of the example switches **150**. The example switch **150** of the example eNID **130** of FIG. **1** can be controlled, configured and/or positioned to: a) electrically couple a first conductor of the example loop **125** to a second conductor of the loop **125**, or b) electrically couple the first and second conductors of the

loop **125** to respective conductors of the subscriber wiring **145**. The example switch **150** of the example eNID **131** of FIG. **1** can be controlled, configured and/or positioned to: a) electrically couple conductors of the example loop **126** to respective conductors of another subscriber loop **128**, or b) electrically couple the conductors of the loop **126** to respective conductors of subscriber wiring **147**. In some examples, all NIDs **130-132** within a geographic area are eNIDs. Additionally or alternatively, a statistically representative set of NIDS **130-132** within a geographic area implement eNIDs. In such examples, test data collected using the associated representative set of loops **125-128** can be used to infer, project and/or otherwise construe the ability of the geographic area as a whole to support the communication service.

To allow the example switches **150** to be remotely configurable and/or controllable, each of the example eNIDs **130** and **131** of FIG. **1** includes a switch controller **152**. The example switch controllers **152** of FIG. **1** receive one or more values, parameters and/or signals from any type of network management server (NMS) **155** via the example DSLAM **115** and a corresponding loop **125**, **126**. The received values, parameters and/or signals indicate to a particular switch controller **150** whether the eNID **130**, **131** associated with that switch controller **150** is to be configured in a loop back state. In some examples, telemetry signals are used to provide loop back state information to the switch controllers **150** via the loops **125** and **126**.

To test the ability of the loops **125-128** to support a communication service, the example DSLAMs/VRADs **115-117** of FIG. **1** implement any number and/or type(s) of line test modules, three of which are designated at reference numerals **160**, **161** and **162**. Using any number and/or type(s) of device(s), component(s), transmitter(s), receiver(s), method(s), algorithm(s), rule(s), procedure(s) and/or logic, the example line test modules **160-162** of FIG. **1** probe, interrogate, sense and/or otherwise test the example loops **125-128** by, for example, sending and/or receiving one or more test signals on a looped back subscriber line **125-128**. Based on the transmitted and/or received test signal(s), the example test modules **160-162** determine one or more test results, values and/or parameters that represent and/or characterize the loops **125-128** and/or that represent and/or characterize the ability of the loops **125-128** to support a particular communication service. Example test results, values and/or parameters include, but are not limited to, a supportable communication service type, a supportable communication service data rate, a useable frequency band, whether bridged taps are present, loop lengths, wire gauge(s), attenuation versus frequency data, amount of noise and/or interference that is present, etc.

To test, pre-qualify and/or otherwise determine whether a communication service could be reliably, efficiently and/or cost effectively provided to a user community at a desired level of customer satisfaction, the example access network **100** of FIG. **1** includes a pre-qualification server **165**. As used herein the term "user community" refers to any plurality of customer premises **110-112**, persons, users and/or subscribers associated with a particular geographic area and/or associated with a particular communication distribution point. Example geographic areas include, but are not limited to, a neighborhood, a street, a telephone exchange, an area code, a portion of a city, a city, a zip code, a postal code, a county, a region, a country, and/or any combination thereof. Example communication distribution points include, but are not limited to, a DSLAM/VRAD, a cable head end, a CO, an RT, a SAI, an intermediate office, a serving office, and/or any combination thereof.

The example pre-qualification server **165** of FIG. **1** assesses the ability of the example access network **100** to provide one or more communication services to a user community. For example, the example pre-qualification server **165** can be used to assess, estimate and/or otherwise analyze whether it is feasible, reasonable and/or appropriate to begin marketing, selling, promoting and/or deploying VDSL services to a user community associated with the example CO **105**. In particular, the example pre-qualification server **165** assesses the ability of the example loops **125-128** to support the VDSL services. The example pre-qualification server **165** of FIG. **1** assesses the loops **125-128** by: a) remotely controlling the eNIDs **130** and **131** into a loop-back state via the example NMS **155**, and b) controlling the test modules **160** to test the loops **125** and **126**. The loops **125** and **126** may be tested sequentially and/or in parallel. The time(s) of day(s) at and/or during which testing is performed may be selected a priori to minimize the interruptions of existing services and/or selected by sensing when an existing service is inactive and only performing testing during such inactive periods. Based on the test results determined by the example test modules **160**, the example pre-qualification server **165** of FIG. **1** generates a pre-qualification report that represents, characterizes and/or reflects how practical it is to deploy a particular communication service to the user community, and/or a degree to which a particular communication service may be provided to and/or operated for the user community. The example pre-qualification server **165** compiles the test results from multiple loops **125-128** to generate the pre-qualification report. In the illustrated example of FIG. **1**, the generated pre-qualification report is provided to a sales and/or marketing server and/or organization **170**. An example pre-qualification test report is described below in connection with FIG. **2**.

An example metric that may be used to represent the ability of a user community to support a particular service (for example, a 50 Mbps VDSL service) and/or represent a degree to which the service may be provided to and/or operator for the user community is the number and/or percentage of the loops **125-128** that do not appear to be currently able to support the service. That is, the number and/or percentage of loops **125-128** that have exceptions, which may currently preclude deployment of the communication service. For example, if less than 10 percent (%) of the loops **125-128** would require maintenance and/or repair (for example, to remove bridge taps and/or to reduce interference noise), marketing and/or sales organizations can widely market, sell and/or promote the service to the user community. If between 10% and 30% of the loops **125-128** may require maintenance and/or repair, the service can be marketed, sold and/or promoted on a limited basis depending on the availability of adequate numbers of service technicians to diagnose and/or troubleshoot service problems that arise during installations and/or in response to customer calls. When more than 30% of the loops **125-128** may require maintenance and/or repair, it may be more cost effective to delay marketing, selling and/or promoting the service until adequate remediation of the loop plant is performed. If such loop plant remediation is not performed up front, customer satisfaction and/or revenues may be negatively impacted. An example process that may be carried out to pre-qualify a user community for a community service is described below in connection with FIG. **5**.

The device(s), component(s), transmitter(s), receiver(s), method(s), algorithm(s), rule(s), procedure(s) and/or logic implemented by the example test modules **160-162** of FIG. **1** to test, characterize and/or pre-qualify the loops **125-128** for a communication service can be progressively improved as the communication service is installed for different user com-

munities. For example, pre-qualification test results determined for a first user community can be compared with actual installation experiences for the first user community to identify enhancements, refinements and/or improvements to the pre-qualification process(es) implemented by the example pre-qualification server **165** and the test modules **160-162** to pre-qualify one or more loops associated with a second user community for the communication service. For example, if it was empirically observed that more loops of the first user community were unable to support the communication service than the number estimated by the example pre-qualification server **165**, one or more threshold(s), method(s), algorithm(s), rule(s), procedure(s) and/or logic used by the example test modules **160-162** can be modified and/or adjusted accordingly.

In addition to or alternative to the automated testing and/or pre-qualification of a user community for a communication service described above, the example pre-qualification server **165** of FIG. **1** can interact with and/or utilize a user, customer and/or subscriber **175** to assess whether it is feasible to install and/or deploy a particular communication service for that user **175**. While such testing is performed responsive to individual users **175**, the results of such testing can be combined with a) testing performed for and/or by other individual users **175** and/or b) automated testing results to pre-qualify a user community at large for the service.

The example user **175** of FIG. **1** may learn about and/or be notified of new and/or upgraded communication service(s) via any number and/or type(s) of means. For example, the user **175** may be receive a flyer via postal mail, may receive an email, and/or be presented with a webpage. Such notifications can present information (e.g., cost, features, etc.) regarding the new and/or upgraded communication service(s), provide information regarding how the user **175** can learn more about the new and/or upgraded communication service(s), and/or provide information regarding how to test or assess whether they are able to receive the new and/or upgraded communication service(s) at their respective customer premises **112**. In response to any such notification(s), the example user **175** of FIG. **1** downloads and installs evaluation software **180** on any type of personal computer (PC) **185** that is communicatively coupled to their respective CPE DSL modem **122**. The example evaluation software **180** of FIG. **1** may be downloaded from, for example, the pre-qualification server **165** via the VRAD **116**, the loop **127** and the CPE DSL modem **122**. In some examples, the example evaluation software **180** is implemented with a web-based graphical user interface (GUI), and implements one or more web-based application programming interfaces (APIs) to interact with the CPE DSL modem **122** and/or the example pre-qualification server **165**.

When execution of the evaluation software **180** is activated and/or started on the example PC **185**, the example evaluation software **180** of FIG. **1** collects from the pre-qualification server **165** information (e.g., cost, features, etc.) regarding the new and/or upgraded communication service(s) and presents the collected information to the user **175** via, for example, a web-based GUI. The presented web-based GUI includes one or more user interface elements, such as buttons, check boxes, menus, etc., which allow the user **175** to indicate and/or provide permission for the CPE DSL modem **122** and the example pre-qualification server **165** to: a) temporarily interrupt one or more existing services present on the loop **127** and to test the loop **127**, and b) determine whether the loop **127** is capable to support the new and/or upgraded communication service(s).

After receiving permission from the user **175**, the example evaluation software **180** of FIG. **1** activates a test module implemented by the example CPE DSL modem **190**. Using any number and/or type(s) of device(s), component(s), transmitter(s), receiver(s), method(s), algorithm(s), rule(s), procedure(s) and/or logic, the example test module **190** of FIG. **1** probes, interrogates, senses and/or otherwise tests the example loop **127** by, for example, exchanging one or more test signals with the example test module **161** via the loop **127**. Based on the exchanged test signal(s), the example test module **161** and/or the example test module **190** determine one or more test results, values and/or parameters that represent and/or characterize the loop **127** and/or that represent and/or characterize the ability of the loop **127** to support one or more communication services. Example test results, values and/or parameters include, but are not limited to, an estimated data rate, a useable frequency band, whether bridged taps are present, loop lengths, wire gauge(s), attenuation versus frequency data, amount of noise and/or interference that is present, etc.

When testing of the loop **127** is completed, the example evaluation software **180** of FIG. **1** restores the previous configuration of the example CPE DSL modem **122** to restore any existing communication service(s) that were interrupted by the testing of the loop **127**. The example evaluation software **180** presents one or more results of the testing to the user **175** via, for example, a web-based GUI. Example presented results include, but are not limited to, an indication of whether the new and/or upgraded communication service(s) can be supported by the loop **127** and, if supported, how the user **175** can request and/or make further inquiry about the new and/or upgraded communication service(s). In some examples, the presented results include a uniform resource link (URL) that allows the user to proceed to a customer service and/or order entry website, which allows the user **175** to request activation and/or installation of the new and/or upgraded communication service(s). The presented web-based GUI also includes one or more user interface elements, such as buttons, check boxes, menus, etc., which prompt the user **175** to indicate and/or provide how interested they are in subscribing to the new and/or upgraded communication service(s). Service interest information collected by the evaluation software **180** from the user **175** is provided to the pre-qualification server **165** via, for example, the CPE DSL modem **122**, the loop **127** and the VRAD **116**.

Based on the testing performed on the loop **127** and/or the collected interest information, the example pre-qualification server **165** of FIG. **1** generates a customer premises evaluation report that includes one or more results of the testing and/or the interest level provided by the user **175**. An example user evaluation report is described below in connection with FIG. **3**. Based on the example test, the example pre-qualification server **165** also updates a market analysis report and/or a pre-qualification test report. An example market analysis report is described below in connection with FIG. **4**.

While an example access network **100** has been illustrated in FIG. **1**, one or more of the interfaces, data structures, elements, processes and/or devices illustrated in FIG. **1** may be combined, divided, re-arranged, omitted, eliminated and/or implemented in any other way. Further, the example line test modules **160-162**, the example pre-qualification server **165**, the example evaluation software **180**, and/or the example test module **190** of FIG. **1** may be implemented by hardware, software, firmware and/or any combination of hardware, software and/or firmware. Thus, for example, any of the example line test modules **160-162**, the example pre-qualification server **165**, the example evaluation software **180**, and/or the example test module **190** may be implemented by one or more device(s), circuit(s), programmable processor(s), application

specific integrated circuit(s) (ASIC(s)), programmable logic device(s) (PLD(s)) and/or field programmable logic device(s) (FPLD(s)), etc. Further still, an access network may include interfaces, data structures, elements, processes and/or devices instead of, or in addition to, those illustrated in FIG. **1** and/or may include more than one of any or all of the illustrated interfaces, data structures, elements, processes and/or devices.

While an example manner of implementing the example eNIDs **130** and **131** are illustrated in FIG. **1**, one or more of the elements, processes, interfaces and/or devices illustrated in connection with the example eNIDs **130** and/or **131** FIG. **1** may be combined, divided, re-arranged, omitted, eliminated and/or implemented in any way. Further, the example switches **150**, the example switch controllers **152** and/or, more generally, the example eNIDs **130** and **131** of FIG. **1** may be implemented by hardware, software, firmware and/or any combination of hardware, software and/or firmware. Thus, for example, any or all of the example switches **150**, the example switch controllers **152** and/or, more generally, the example eNIDs **130** and **131** may be implemented by one or more circuit(s), programmable processor(s), ASIC(s), PLD(s) and/or FPLD(s), etc. Further still, an eNID may include one or more elements, processes, interfaces and/or devices in addition to, or instead of, those illustrated in FIG. **1**, and/or may include more than one of any or all of the illustrated elements, processes, interfaces and devices.

FIG. **2** illustrates an example pre-qualification test report **200**. To identify a marketing area, the example pre-qualification test report **200** of FIG. **2** includes a marketing area identifier field **205**. The example marketing area identifier field **205** of FIG. **2** contains one or more values, letters and/or strings that uniquely identify a particular marketing area, such as a neighborhood, a street, a telephone exchange, an area code, a portion of a city, a city, a zip code, a postal code, a county, a region, a country, and/or any combination thereof.

The example pre-qualification test report **200** of FIG. **2** includes a plurality of entries **210** for respective combinations of communication services and DSLAMs/VRADs **115-117** that are located within the marketing area identified by the field **205**, and which were analyzed by the example pre-qualification server **165**. To identify a DSLAM/VRAD **115-117**, each of the example entries **210** of FIG. **2** includes a DSLAM/VRAD identifier field **215**. Each of the example DSLAM/VRAD identifier fields **215** of FIG. **2** contains one or more values, letters and/or strings that uniquely identify a particular DSLAM/VRAD **115-117**.

To identify a particular type and/or speed of communication service (e.g., 25 Million bits per second (Mbps) VDSL service), each of the example entries **210** of FIG. **2** includes a service field **220**. Each of the example service fields **220** of FIG. **2** contains one or more values, letters and/or strings that uniquely identify a particular service that was analyzed. To store the number and/or percentage of loops **125-128** that may not currently be able to support the service **220**, each of the example entries **210** of FIG. **2** includes an exception field **225**. The example exception field **225** of FIG. **2** contains a number that represents the percentage of loops **125-128** associated with the DSLAM/VRAD **115-117** identified in the field **215** that may require maintenance and/or repair before the corresponding service **220** can be reliably deployed.

While an example pre-qualification test report **200** that may be generated by the example pre-qualification server **165** of FIG. **1** is illustrated in FIG. **2**, the example pre-qualification test report **200** may be implemented using any number and/or type(s) of other and/or additional entries, fields and/or data. Further, the entries, fields and/or data illustrated in FIG. **2** may be combined, divided, re-arranged, eliminated and/or implemented in any way. Further still, the pre-qualification test report **200** may include entries, fields and/or data in addition to, or instead of, those illustrated in FIG. **2**, and/or may include more than one of any or all of the illustrated entries, fields and/or data.

FIG. **3** illustrates an example customer premises evaluation report **300** that may be generated by the example pre-qualification server **165** of FIG. **1**. To identify a particular customer premises, the example customer premises evaluation report **300** contains a customer identifier field **305**. The example customer identifier field **305** of FIG. **3** contains one or more values, letters and/or strings that uniquely identify a particular subscriber and/or customer premises.

To identify a marketing area associated with the customer premises **305**, the example customer premises evaluation report **300** of FIG. **3** includes a marketing area identifier field **310**. The example marketing area identifier field **310** of FIG. **3** contains one or more values, letters and/or strings that uniquely identify a particular marketing area, such as a neighborhood, a street, a telephone exchange, an area code, a portion of a city, a city, a zip code, a postal code, a county, a region, a country, and/or any combination thereof.

To identify a DSLAM/VRAD **115-117** associated with the customer premises **305**, the example customer premises evaluation report **300** of FIG. **3** includes a DSLAM/VRAD identifier field **315**. The example DSLAM/VRAD identifier field **315** of FIG. **3** contains one or more values, letters and/or strings that uniquely identify a particular DSLAM/VRAD **115-117**. To identify an existing communication service associated with the customer premises **305**, the example customer premises evaluation report **300** of FIG. **3** includes an existing service field **320**. The example existing service field **320** of FIG. **3** contains one or more values, letters and/or strings that uniquely identify a particular service currently being provided to the customer premises **305**.

To identify possible communication service(s), the example customer premises evaluation report **300** of FIG. **3** includes a possible service field **325**. The example possible service field **325** of FIG. **3** contains one or more values, letters and/or strings that uniquely identify one or more communication services that have been identified as being deployable to the customer premises **305**. To store interest information, the example customer premises evaluation report **300** of FIG. **3** includes an interest field **330**. The example interest field **330** of FIG. **3** contains one or more numbers that respectively represent how interested a user associated with the customer premises **305** is in subscribing to each of the services **325**.

While an example customer premises evaluation report **300** that may be generated by the example pre-qualification server **165** of FIG. **1** is illustrated in FIG. **3**, the example customer premises evaluation report **300** may be implemented using any number and/or type(s) of other and/or additional entries, fields and/or data. Further, the entries, fields and/or data illustrated in FIG. **3** may be combined, divided, re-arranged, eliminated and/or implemented in any way. Further still, the customer premises evaluation report **300** may include entries, fields and/or data in addition to, or instead of, those illustrated in FIG. **3**, and/or may include more than one of any or all of the illustrated entries, fields and/or data.

FIG. **4** illustrates an example market analysis report **400**. To identify a marketing area, the example pre-qualification test report **400** of FIG. **4** includes a marketing area identifier field **405**. The example marketing area identifier field **405** of FIG. **4** contains one or more values, letters and/or strings that uniquely identify a particular marketing area, such as a neighborhood, a street, a telephone exchange, an area code, a

portion of a city, a city, a zip code, a postal code, a county, a region, a country, and/or any combination thereof.

The example market analysis report **400** of FIG. **4** includes a plurality of entries **410** for respective combinations of communication services and DSLAMs/VRADs **115-117** that are located within the marketing area identified by the field **405**, and which were analyzed by the example pre-qualification server **165**. To identify a DSLAM/VRAD **115-117**, each of the example entries **410** of FIG. **4** includes a DSLAM/VRAD identifier field **415**. Each of the example DSLAM/VRAD identifier fields **415** of FIG. **4** contains one or more values, letters and/or strings that uniquely identify a particular DSLAM/VRAD **115-117**.

To identify a particular type and/or speed of communication service (e.g., 25 Million bits per second (Mbps) VDSL service), each of the example entries **410** of FIG. **4** includes a service field **420**. Each of the example service fields **420** of FIG. **4** contains one or more values, letters and/or strings that uniquely identify a particular service that was analyzed. To store the number loops **125-128** that are able to support the service **420**, each of the example entries **410** of FIG. **4** includes a number of upgrades field **425**. The example number of upgrades field **425** of FIG. **4** contains a number that represents the number of loops that have been tested as capable of supporting the service **420**. To store interest information, each of the example entries **410** of FIG. **4** includes an interest field **430**. Each of the example interest fields **430** of FIG. **4** contains a number that collectively represents how interested a user community associated with the example DSLAM/VRAD **415** is in subscribing to the service **420**.

While an example market analysis report **400** that may be generated by the example pre-qualification server **165** of FIG. **1** is illustrated in FIG. **4**, the example market analysis report **400** may be implemented using any number and/or type(s) of other and/or additional entries, fields and/or data. For example, the example pre-qualification test report **200** may be combined with the example marketing analysis report **400** to form a report that collectively represents a number of upgradeable loops, a percentage of exceptions and subscriber interest information for each combination of DSLAM/VRAD and communication service. Further, the entries, fields and/or data illustrated in FIG. **4** may be combined, divided, re-arranged, eliminated and/or implemented in any way. Further still, the market analysis report **400** may include entries, fields and/or data in addition to, or instead of, those illustrated in FIG. **4**, and/or may include more than one of any or all of the illustrated entries, fields and/or data.

FIGS. **5** and **6** are flowcharts representative of example processes that may be carried out to implement the example pre-qualification server **165** of FIG. **1**. FIG. **7** is a flowchart representative of an example process that may be carried out to implement the example evaluation software **180** of FIG. **1**. FIG. **8** is a flowchart representative of an example process that may be carried out by, for example, the user **175**, to test a loop **125-128** for a communication service.

The example processes of FIGS. **5-7** may be carried out by a processor, a controller and/or any other suitable processing device. For example, the example processes of FIGS. **5-7** may be embodied in coded instructions stored on any tangible computer-readable medium such as a flash memory, a compact disc (CD), a digital versatile disc (DVD), a floppy disk, a read-only memory (ROM), a random-access memory (RAM), a programmable ROM (PROM), an electronically-programmable ROM (EPROM), and/or an electronically-erasable PROM (EEPROM), an optical storage disk, an optical storage device, magnetic storage disk, a magnetic storage device, and/or any other medium which can be used to carry or store program code and/or instructions in the form of machine-accessible instructions or data structures, and which can be accessed by a processor, a general-purpose or special-purpose computer, or other machine with a processor (e.g., the example processor platform P**100** discussed below in connection with FIG. **9**). Combinations of the above are also included within the scope of computer-readable media. Machine-accessible instructions comprise, for example, instructions and/or data that cause a processor, a general-purpose computer, special-purpose computer, or a special-purpose processing machine to implement one or more particular processes. Alternatively, some or all of the example processes of FIGS. **5-7** may be implemented using any combination(s) of ASIC(s), PLD(s), FPLD(s), discrete logic, hardware, firmware, etc. Also, some or all of the example processes of FIGS. **5-7** may instead be implemented manually or as any combination of any of the foregoing techniques, for example, any combination of firmware, software, discrete logic and/or hardware. Further, many other methods of implementing the example operations of FIGS. **5-8** may be employed. For example, the order of execution of the blocks may be changed, and/or one or more of the blocks described may be changed, eliminated, sub-divided, or combined. Additionally, any or all of the example processes of FIGS. **5-8** may be carried out sequentially and/or carried out in parallel by, for example, separate processing threads, processors, devices, discrete logic, circuits, etc.

The example process of FIG. **5** begins with the example pre-qualification server **165** of FIG. **1** remotely controlling an eNID associated with a presently considered loop (e.g., the example eNID **130** associated with the loop **125**) into a loop back state via the NMS **155** (block **505**). The pre-qualification server **165** directs a line test module **160-162** associated with the presently considered loop to interrogate and/or test the loop (block **510**). When testing is complete, the line test module **160-162** and/or the pre-qualification server **165** determine whether the presently considered loop is an exception relative to a communication service being tested (block **515**). That is, the line test module **160-162** and/or the pre-qualification server **165** determine whether the loop is able to support the communication service.

Based on the test results, the pre-qualification server **165** updates a pre-qualification test report, such as the example pre-qualification test report **200** of FIG. **2** (block **520**). The pre-qualification server **165** controls the eNID out of the loop back state via the NMS **155** (block **525**).

If there are more loops associated with a presently considered DSLAM/VRAD **115-117** to test (block **530**), control returns to block **505** to test the next loop. If there are no more loops associated with the presently considered DSLAM/VRAD **115-117** to test (block **530**), the pre-qualification server **165** determines whether there are more DSLAMs/VRADs **115-117** to test (block **535**). If there are more DSLAMs/VRADs **115-117** to test (block **535**), control returns to block **505** to start testing the next DSLAM/VRAD **115-117**. If there are no more DSLAMs/VRADs **115-117** to test (block **535**), control exits from the example process of FIG. **5**.

The example process of FIG. **6** begins with the example pre-qualification server **165** and/or the example marketing/sales marketing server and/or organization **170** of FIG. **1** providing a notice regarding new and/or upgraded communication service(s) to a user **175** associated with a particular customer premises **110-112** (block **605**). If the user **175** responds to the notification with an interest in and/or permission to test their associated loop **125-128** for the new and/or upgraded communication service(s) (block **610**), the pre-

qualification server **165** provides the example evaluation software **180** of FIG. **1** to the user **175** (block **615**). Responsive to initiation of the evaluation software **180** by the user **175**, the example pre-qualification server **165**, the example line test module **160-162** and the example test module **190** of FIG. **1** test the user's loop **125-128** for the communication service(s) (block **620**). When testing is complete, the line test module **160-162**, the test module **190** and/or the pre-qualification server **165** determine whether the presently considered loop **125-128** is able to support the new and/or upgraded communication service(s) being tested (block **625**).

The pre-qualification server **165** provides results of the testing and/or information regarding supportable new and/or upgraded communication service(s) to the user **175** via the evaluation software **180** (block **630**). The pre-qualification server **165** collects information regarding the user's interest in the new and/or upgraded communication service(s) via the evaluation software **180** (block **635**). The pre-qualification server **165** creates a customer premises evaluation report, such as the example customer premises evaluation report **300** of FIG. **3** (block **640**), and updates a market analysis report, such as the example market analysis report **400** of FIG. **4** (block **645**). Control then exits from the example process of FIG. **6**.

Returning to block **610**, if the user did not express an interest in and/or provide permission to test their associated loop **125-128** (block **610**), control exits from the example process of FIG. **6**.

The example process of FIG. **7** begins with the example evaluation software **180** initializing one or more of its internal variables, parameters and/or states (block **705**). The evaluation software **180** provides information regarding the test(s) to be performed via, for example, a web-based GUI (block **710**), and prompts the example user **175** for permission to begin the test(s) (block **715**). If permission is received (block **720**), the evaluation software **180** controls the example test module **190** of the example CPE DSL modem **122** associated with the evaluation software **180** to begin testing of the loop **125-128** (block **725**).

When testing is complete (block **730**), the evaluation software **180** collects and displays test results and/or information regarding supportable new and/or upgraded communication service(s) for the user **175** (block **735**). The evaluation software **180** collects from the user **175** information regarding their interest in the new and/or upgraded communication service(s) (block **740**), and reports the collected interest information to the example pre-qualification server **165** (block **745**). The evaluation software **180** controls the CPE DSL modem **122** to return to its previous setting(s) and/or configuration to restore any interrupted service(s) (block **750**). Control then exits from the example process of FIG. **7**.

Returning to block **720**, if the user does not provide permission to test the loop **125-128** (block **720**), control exits from the example process of FIG. **7** without testing the user's loop **125-128**.

The example process of FIG. **8** begins with the example user **175** of FIG. **1** receiving a notification regarding new and/or upgraded communication service(s) (block **805**). If the user **175** is interested in testing their associated loop **125-128** for the new and/or upgraded communication service(s) (block **810**), the user **175** downloads and/or installs the evaluation software **180** on the PC **185** communicatively coupled to their CPE DSL modem **120-122** (block **815**). The user **175** starts execution of the evaluation software **180** (block **820**).

If the user **175** provides permission to test their associated loop **125-128** (block **825**), the user **175** reviews one or more test results when testing is complete (block **830**). The user **175** also reviews information regarding the new and/or upgraded communication service(s) (block **835**). When prompted, the user **175** provides one or more indications of interest in the new and/or upgraded communication service(s) (block **840**). The example process of FIG. **8** is then ended.

Returning to block **825**, if the user **175** does not provide permission to test their associated loop **125-128** (block **825**), the example process of FIG. **8** is ended without testing the loop **125-128**.

FIG. **9** is a schematic diagram of an example processor platform P**100** that may be used and/or programmed to implement the example DSLAMs/VRADs **115-117**, the example CPE DSL modems **120-122**, the example eNIDs **130** and **131**, the example switch controllers **152**, the example NMS **155**, the example pre-qualification server **165**, the example test modules **160-162** and **190**, the example evaluation software **180** and/or the example personal computer **185**. For example, the processor platform P**100** can be implemented by one or more general-purpose processors, processor cores, microcontrollers, etc.

The processor platform P**100** of the example of FIG. **9** includes at least one general purpose programmable processor P**105**. The processor P**105** executes coded instructions P**110** and/or P**112** present in main memory of the processor P**105** (e.g., within a RAM P**115** and/or a ROM P**120**). The processor P**105** may be any type of processing unit, such as a processor core, a processor and/or a microcontroller. The processor P**105** may execute, among other things, the example processes of FIGS. **5-7** to implement the example methods and apparatus described herein.

The processor P**105** is in communication with the main memory (including a ROM P**120** and/or the RAM P**115**) via a bus P**125**. The RAM P**115** may be implemented by DRAM, SDRAM, and/or any other type of RAM device, and ROM may be implemented by flash memory and/or any other desired type of memory device. Access to the memory P**115** and the memory P**120** may be controlled by a memory controller (not shown). One or both of the example memories P**115** and P**120** may be used to store the example pre-qualification test report **200**, the example customer premises evaluation report **300** and/or the example market analysis report **400**.

The processor platform P**100** also includes an interface circuit P**130**. The interface circuit P**130** may be implemented by any type of interface standard, such as an external memory interface, serial port, general-purpose input/output, etc. One or more input devices P**135** and one or more output devices P**140** are connected to the interface circuit P**130**. The input devices P**135** and/or output devices P**140** may be used to, for example, transmit and/or receive test signals, to receive switch **150** control information and/or to control the switches **150**. Although certain example methods, apparatus and articles of manufacture have been described herein, the scope of coverage of this patent is not limited thereto. On the contrary, this patent covers all methods, apparatus and articles of manufacture fairly falling within the scope of the appended claims either literally or under the doctrine of equivalents.

The invention claimed is:

1. A method comprising:

sensing service activity status for a first loop and a second loop;

configuring a first remote network demarcation associated with a first customer premises and with the first loop to a loop-back state when the service activity status indicates an inactive status associated with the service on the first loop;

interrogating the first loop to determine a first parameter representative of the first loop when the service activity status indicates the inactive status, and preventing interrogation of the first loop when the service activity status indicates activity;

configuring a second remote network demarcation associated with a second customer premises and with the second loop to the loop-back state when the service activity status indicates an inactive status is associated with the service on the second loop;

interrogating the second loop to determine a second parameter representative of the second loop, and preventing interrogation of the second loop when the service activity status indicates activity on the second loop; and

marketing the service to a user community when a plurality of the first and second parameters indicate fewer than a threshold number of first and second loops require maintenance, and preventing marketing of the service to the user community when the plurality of the first and second parameters indicate greater than the threshold number of first and second loops require maintenance.

2. A method as defined in claim **1**, wherein interrogating the first loop includes at least one of transmitting a first signal on the first loop, or receiving a second signal on the first loop.

3. A method as defined in claim **1**, wherein interrogating the first loop to determine the first parameter includes determining whether the first loop meets a criterion associated with the communication service, and incrementing an exception count when the first loop fails to meet the criterion.

4. A method as defined in claim **1**, wherein the threshold includes a value representing a percentage of loops of the user community that may fail to meet a criterion associated with the communication service.

5. A method as defined in claim **4**, wherein the percentage is estimated based on interrogations performed on a representative set of loops associated with the user community.

6. A method as defined in claim **1**, wherein configuring the first network demarcation to the loop-back state includes remotely configuring a switch at the first network demarcation to electrically couple a first conductor of the first loop to a second conductor of the first loop.

7. A method as defined in claim **1**, wherein configuring the first network demarcation to the loop-back state includes remotely configuring a switch at the first network demarcation to electrically couple a first conductor of the first loop to a second conductor of a third loop, and interrogating the first loop includes transmitting a first signal on the first loop and receiving a second signal on the third loop.

8. A method as defined in claim **1**, wherein the first parameter represents at least one of a supportable communication service type, a supportable communication service data rate, a useable frequency band, whether a bridged tap is present, a loop length, a wire gauge, attenuation versus frequency data, an amount of noise that is present, or an amount of interference that is present.

9. A method as defined in claim **1**, wherein the first parameter represents a condition of the first loop that prevents the first loop from supporting the communication service.

10. A method as defined in claim **1**, further including a communication distribution point of a user community including at least one of a digital subscriber line access multiplexer, a video-ready access device, a remote terminal, a serving area interface, a central office, a serving office, an intermediate office, or a cable modem head end.

11. A method as defined in claim **1**, further including a geographic area of a user community, the area including at least one of a street, a neighborhood, a portion of a city, a city, a county, a state, a country, a zip code, a postal code, a telephone exchange, or an area code.

12. A system comprising:

a first test module to (1) sense a service activity status for a first subscriber line, (2) to interrogate the first subscriber line when the service activity status is an inactive status to determine a first parameter representative of the first subscriber line, and (3) to prevent interrogation of the first subscriber line when the service activity status indicates activity, the first subscriber line associated with a first customer premises having a first demarcation point;

a second test module to (1) sense a second service activity status for a second subscriber line, (2) to interrogate the second subscriber line when the second service activity status is an inactive status to determine a second parameter representative of the second subscriber line, and (3) to prevent interrogation of the second subscriber line when the second service activity status indicates activity, the second subscriber line associated with a second customer premises having a second demarcation point; and

a pre-qualification server to:

configure the first network demarcation point associated with the first subscriber line to a loop-back state in response to the first service activity status indicating the inactive status on the first subscriber line;

configure the second network demarcation point associated with the second subscriber line to the loop-back state in response to the second service activity status indicating the inactive status on the second subscriber line;

approve a marketing effort of the service to a user community when a plurality of the first and second parameters indicate fewer than a threshold number of first and second loops require maintenance; and

delay the marketing effort of the service to the user community when the plurality of the first and second parameters indicate greater than the threshold number of first and second loops require maintenance.

13. A system as defined in claim **12**, wherein the first network demarcation point includes:

a switch having first and second positions, when the switch is in the first position the switch is to communicatively couple a first conductor of the first subscriber line to a second conductor of the first subscriber line; and

a switch controller responsive to the pre-qualification server to control the position of the switch.

14. A system as defined in claim **12**, wherein the first network demarcation point includes:

a switch having first and second positions, when the switch is in the first position the switch is to couple a first conductor of the first subscriber line to a second conductor of a third subscriber line; and

a switch controller responsive to the pre-qualification server to control the position of the switch.

15. A system as defined in claim **12**, wherein the first parameter represents a condition of the first subscriber line that prevents the first subscriber line from supporting the communication service.

16. A system as defined in claim **12**, wherein the communication distribution point includes at least one of a digital subscriber line access multiplexer, a video-ready access device, a remote terminal, a serving area interface, a central office, a serving office, an intermediate office, or a cable modem head end.

17. A machine readable storage device comprising instructions that, when executed, cause a machine to perform operations comprising:

sensing service activity status for a first loop and a second loop;

configuring a first remote network demarcation associated with a first customer premises and with the first loop to a loop-back state when the service activity status indicates an inactive status associated with the service on the first loop;

interrogating the first loop to determine a first parameter representative of the first loop when the service activity status indicates the inactive status, and preventing interrogation of the first loop when the service activity status indicates activity;

configuring a second remote network demarcation associated with a second customer premises and with the second loop to the loop-back state when the service activity status indicates an inactive status is associated with the service on the second loop;

interrogating the second loop to determine a second parameter representative of the second loop, and preventing interrogation of the second loop when the service activity status indicates activity on the second loop; and

marketing the service to a user community when a plurality of the first and second parameters indicate fewer than a threshold number of first and second loops require maintenance, and preventing marketing of the service to the user community when the plurality of the first and second parameters indicate greater than the threshold number of first and second loops require maintenance.

18. The machine-readable storage device as defined in claim 17, wherein the instructions, when executed, cause the machine to determine the first parameter by at least determining whether the first loop meets a criterion associated with the communication service, and incrementing an exception count when the first loop fails to meet the criterion.

19. The machine-readable storage device as defined in claim 17, wherein the threshold includes a value representing a percentage of loops of the user community that may fail to meet a criterion associated with the communication service.

20. The machine-readable storage device as defined in claim 19, wherein the percentage is estimated based on interrogations performed on a representative set of loops associated with the user community.

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